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ABSTRACT

By examining educational aspiration, this study uses data on high school senior females to explore the contention that race remains embedded in late 20th-century American culture as a primary qualifier of gender role. The study focuses on a sample of 4,573 black and white female high school seniors in the class of 1980 using data from the national stratified High School and Beyond study. The sample includes girls who were living with their mothers or other female guardians at the time they participated in the HSB study. The results indicate that the majority of all females (83.8%) plan to pursue some form of postsecondary education, and that almost half (45.6%) plan to complete at least a Bachelor's degree. Two-way analysis of variance confirm that race and family income have significant effects on female's education plans. The higher the family income, the higher the percentage of females, both black and white, who plan to pursue their education at least into college. Among females from families with incomes of at least 25,000 dollars, black females are less likely than white females to plan to complete a Bachelor's degree (26.1% of black females versus 34.7% of white females). However, among females from families with incomes of less than 12,000 dollars, black females are more likely to plan postgraduate education (22.2% of black females versus 10.4% of white females). Statistical data are presented in eight tables. A list of 43 references are included. (JB)

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PREDICTING ADOLESCENT FEMALES' PLANS FOR HIGHER EDUCATION: RACE AND SOCIOECONOMIC DIFFERENCES

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A B S T R A C T

Karraker, Meg Wilkes. (Department of Sociology, University of St. Thomas, St. Paul, MN 55105.) **Predicting Adolescent Females' Plans for Higher Education: Race and Socioeconomic Differences.** Paper presented at the Sixteenth National Conference on Blacks in Higher Education, the Annual Meetings of the National Association for Equal Opportunity in Higher Education, March 21, 1991, Washington, D.C.

This study used data on high school senior females in the class of 1980 from a national, stratified study (High School and Beyond). Earlier research on these data had supported the contention that race remains embedded in late twentieth century American culture as a primary qualifier of gender role. The research reported in this paper focused on black and white females, including those who planned to pursue post-secondary education.

The majority (83.8 %) of all females plan to pursue some form of post-secondary education. Two-way analysis of variance confirms that race ($p < .001$) and family income ($p < .001$) have significant effects on female's education plans. The higher the family income, the higher the percentage of females, both black and white, who plan to pursue their education at least into college. Among females from families with incomes of at least $25,000, black females are less likely than white females to plan to complete a Bachelor's degree (26.1 % of black females versus 34.7 % of white females). However, among females from families with incomes of less than $12,000, black females are more likely to plan post-

graduate education (22.2 % of black females versus 10.4 % of white females).

In contrast to the "culture of poverty" thesis, these findings confirm those from earlier research. When other factors are controlled, black female adolescents' plans for higher levels of education are not generally depressed in comparison to white female adolescents. Implications for research and theory and for higher education are discussed.

Acknowledgements

This paper is based on the **High School and Beyond** data set. Data for members of the high school class of 1980 were collected by researchers at the National Opinion Research Center working under the auspices of the United States Department of Education.

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INTRODUCTION

The research reported in this paper addresses three questions related to female education plans:

1. Do black and white females have the same or different plans for higher education?

2. Do black and white females from the same family income circumstances have the same or different plans for higher education?

3. What contributions do race, family income, and characteristics of the mother make to the education plans of adolescent females?

Late Adolescence, Higher Education, and Female Gender Roles

The last year of high school represents both the culmination of that most intense period of socialization, childhood and adolescence, and the point at which the plans of youth have the highest probable correspondence to actual adult achievement. Late adolescence, and particularly the senior year in high school, would seem to be a critical juncture in the study of gender and, especially, educational attainment.

Several studies, albeit primarily focused on the impact of early marriage and early parenting (e.g., Hofferth and Moore; McLaughlin and Micklin; Elder), have documented how off-timing in transitional events during adolescence can have persistent effects on educational and occupational goal attainment, economic achievement, marital instability, and subsequent childbearing. Stated another way, the girl who attends college is more likely to be the woman who retains or attains middle class status than the girl who does not pursue higher education. To a considerable extent then, the later quality of women's lives is related to their

plans during late adolescence and to the immediately corresponding actions regarding, for example, education.

Completion of education (with labor-force entry, marriage, and parenthood) constitutes a critical social transition for passage into adulthood (Panel on Youth of the President's Science Advisory Committee). However, much of the research on transition to adulthood has examined male unemployment (e.g., Stephenson). That which examines female, especially black female, transition to adulthood most often concentrated on teenage pregnancy (Chilman). One exception is the work of Bush, Simmons, Hutchinson, and Blyth.

The management of non-family roles and the management of the balance between family and non-family roles are among the most critical issues of life management today, especially for females. Adolescents, and particularly adolescent females' education plans are of central importance in the study of gender roles. Unfortunately, the greatest amount of research on gender roles has been focused on white, middle-class, adult women (Karraker, The Effects of Race). In general though, research suggests that black girls' life plans differ from those of white girls in ways which parallel the differences in the life experiences of black and white women, although Gump (351) reminds us that "we know very little about sex-role norms" for black women.

Black women have lower levels of educational achievement than white women (United States Department of Commerce, Bureau of the Census, We, The American Women), but higher levels of academic

achievement than black men (National Scholarship Service for Negro Students; Grant and Lind; Smith).

Race is an important factor in self-definitions of femininity and self-valuation of gender-appropriate role behavior. The literature on black women, particularly that from the black feminist tradition (e.g., Collins), indicates that black women may experience less role incongruity than white women, because of differences in the power of women relative to men in black and white societies and because of social expectations for black women rooted in the history of black people's economic uncertainty, family and community reliance on her, and the dominant society's prejudices toward and expectations of her (Karraker, The Effects of Race). Because of this, and consequent socialization practices (Weitzman), black women may question less the compatibility of achieving both excellence in education and in family life.

Social Structural Influences on Black Female Education Plans

Billingsley, Pinkney, Gurin and Gaylord, and Engram contend that black Americans are subject to the same social expectations as other Americans, although black Americans certainly face higher obstacles in meeting those expectations. From this perspective social class position, not race, determines attitudes and social behavior. This appears to be the case among white ethnics, for whom differences in gender role definitions seem to diminish with movement into the middle-class (Lopreato; Howe). Given the strong association between race and opportunity in American society, and given the current debate regarding the "significance of race" for

achievement in American society (see, specifically, Wilson), the concern over the primacy of race versus socioeconomic status is especially timely. Research findings that poor black females differ significantly from poor white females differ significantly in their gender roles (as the literature focusing on poor black women implies), could support the contention that black and white females respond differently to socioeconomic status.

The functions of education clearly differ for lower class females and their more affluent peers. For lower class females (regardless of race and regardless of aspirations), the terminal year of school is likely to be graduation from high school. For those females, the senior year in high school represents an opportunity to select a husband. For middle class girls, the terminal year of school is more likely to be graduation from college (or even graduate or professional school). Clearly, however, given the differing sex-ratio demographics in black and white populations, the quantitative nature of mate selection differs markedly for black and white females. Leaving school before their peers may further alter the pool of marriage partners for females of both races, but more radically for black females.

Several studies have documented the influences of family income, parent's education status, and parent's occupation status on the timing and sequencing of education status (e.g., Marini, The Transition to Adulthood; Marini, Women's Educational Attainment). The research reported in this paper is in fact part of a larger study which examines the relative contributions of race,

socioeconomic status, and family characteristics - particularly characteristics of the mother - to gender role identity. As such, this research participates in the debate surrounding the relative importance of race and social class in the nexus of disadvantage and opportunity in American society.

METHODOLOGY

The High School and Beyond Sample

This study used data on high school senior females in the class of 1980. These data were collected as part of the study High School & Beyond (HS&B), a national, longitudinal study in which self-administered questionnaires were distributed to a sample from the 1980 cohort of sophomores and seniors.

HS&B employed a two-stage sampling design. First, a stratified, two-stage probability sample of secondary schools, selected proportional to estimated enrollment (average of class sizes), was drawn. Schools were stratified by census divisions, racial composition, enrollment, and residence. Substitutions were made within strata only for schools which refused to participate. The final realized sample was 1,015 schools, 90.5 percent of the original sample. (National Opinion Research Center, Contractor Report)

Second, 36 senior and 36 sophomores (or, where fewer than 36 were available, all eligible students) were randomly selected per school. Substitutions were not made for students who were absent on survey and make-up days, who refused or whose parents refused participation, or who were surveyed incompletely. The final realized sample was 58,270 students (both sophomores and seniors), 82.4 percent of the original sample. (National Opinion Research Center, 1986)

From the original realized sample of 28,240 seniors drawn in 1980 the original researchers drew a subsample of 11,500. That

subsample was drawn "to insure adequate sample sizes for policy relevant groups" (National Opinion Research Center, Contractor Report 8) and was weighted to compensate for unequal probabilities of selection and retention. The research reported in this paper uses black and white females from that weighted sample.

The research on which this paper is based focuses on the effects of the characteristics of the mother on the development of black and white females. Therefore, only black and white females who were living with either their mother or another female guardian at the time they participated in the HS&B study (as seniors in 1980) are included. This yielded a total sample size of 4,573 for this study.

Weighting

The HS&B study used weighting procedures for both schools and students. BYWT, a 15 digit number, represents the base year student design weight constructed by the original researchers to account for disproportionate sampling. This weighting can partially adjust for non-participation/availability, but bias due to differences between respondents and non-respondents may remain. The original researchers report that population estimates derived from these data using this weighting procedure are comparable to estimates from other data sources. (National Opinion Research Center, High School and Beyond)

Unfortunately, the original weighting procedure greatly inflates the number of cases (i.e., 4,573 becomes 1,335,350) and, consequently, could inflate the number of significant results.

Dividing BYWT by 292.0074 (1,335,360/4,573) yielded an adjusted weight (ADJWT) in which the original total sample size of 4,573 could be maintained.

Further, when cluster sampling (such as that described above) is used, standard errors based on simple random sampling underestimate sampling variability in statistics and distort statistical significance. To compensate for this, the adjusted weight (ADJWT) described in the preceding paragraph was divided by 2.728 (the mean estimated design effect calculated by the original research [National Opinion Research Center, Contractor Report Table 3.2.3-2]). This last weighting factor (DEFFWT) reduced the apparent sample size from 4,573 to 1,676 (4,573/2.728) but yields very conservative estimates for purposes of testing statistical significance.

Reducing the weighted sample size using both of these techniques reduces the degrees of freedom used in some tests of significance, but has no effect on cell percentages or means. In the research reported in this paper, all statistics were calculated using both ADJWT and the more conservative DEFFWT. In this paper, Chi square statistics and related tests of significance are reported for the more conservative DEFFWT. Although weighting with ADJWT did not significantly increase the value of the adjusted R square, in some multiple regression equations ADJWT did result in a few additional variables meeting the criterion for inclusion in some regression equations and in some slight changes in the values

of the beta weights. In this paper, only ADJWT values are reported for regression analysis.

Measurement of the Independent Variables

RACE was measured by the question: "What is your race?" Only white and black subjects (coded 0 and 1) are included in this study. Although blacks were over sampled in the HS&B study, reproportioning cases using the weighting factor yields a sample which very closely approximates the proportions of white and black females in the general population of high school seniors. In fact, blacks are under-represented and whites are over-represented by only 2.2 percent. (Karraker, The Effects of Race Table II-9)

This research illustrates the often discussed (see, for example, Acker) complexity of measuring socioeconomic status for females. If applied in this study, standard methods for measuring socioeconomic status would result in missing data when a subject lived in a household with no father present or when her mother had no occupation other than homemaker. Family income, which can take into account the presence of income from one or more earners, provides a measure of economic resources available to the subject's family.

FAMILY INCOME was measured by the question: "Mark the oval for the group which comes closest to the amount of money your family makes in a year." The seven response choices ranged from "$6,999 or less" to "$38,000 or more." In descriptive analysis FAMILY INCOME was trichotomized as "Low" ($11,999 or less), "Middle"

($12,000 to 24,999), and "High" ($25,000 or more). All seven categories of FAMILY INCOME were used in causal analysis.

Throughout the questionnaire, in cases where she was not living with her mother, the respondent was instructed to respond using her step-mother or other female guardian living in the same household. For the independent variables, described below, which measure characteristics of the mother (MOTHER'S EDUCATION STATUS, MOTHER'S EMPLOYMENT STATUS, MOTHER'S OCCUPATION STATUS, and MOTHER'S FAMILY STATUS), "mother" refers to the woman occupying the mother role, whether she is the biological or adopted mother (which cannot be distinguished in these data) or the female guardian (e.g., step-mother, foster mother).

MOTHER'S EDUCATION STATUS was measured by the question: "What is the highest level of education your mother completed?" The nine response categories ranged from "less than high school" to "Doctoral degree."

MOTHER'S EMPLOYMENT STATUS was measured by the question: "Did your mother usually work during the following periods of your life?...When you were in high school?" The response categories for this variable were "not employed," "employed part-time," and "employed full-time." Although MOTHER'S EMPLOYMENT STATUS is a trichotomous nominal variable, order is implied. The highest value implies highest engagement in employment, the lowest value implies lowest engagement, and the middle value implies moderate engagement.

MOTHER'S OCCUPATION STATUS was measured from the following item: "Please describe below the job most recently held by your mother even if she is not working at present. [WRITE IN] Which of the following categories comes closest to describing that job? [MARK ONE]." Open-ended responses (not available on the public access data tape) were coded into sixteen broad occupation categories, plus "homemaker or housewife only" and "never worked." For the research reported in this paper, MOTHER'S OCCUPATION STATUS was recoded into four categories based on the mean occupation prestige of major occupation groups for women in the 1980 labor force (Stevens and Hoisington, 1987). (Of course, women who were homemakers only and those who had never worked were not included in this part of the analysis.)

The first category for this research - "unskilled" - included occupations with mean prestige ratings ranging from 20.27 to 26.86. The second category - "semiskilled" - included occupations with mean prestige scores from 27.43 to 30.36. The third category - "white-collar/craft" - included occupations with mean prestige scores from 34.26 to 42.16.

Because of the breadth in some of the original researchers' categories the two professional categories (which combined into one category occupations as diverse as registered nurse, engineer, and athlete), were combined with manager, teacher, and technical occupations. This retained the broad homogeneity of mean prestige scores across occupations in the professional/technical category.

The measurement of MOTHER'S FAMILY STATUS was drawn from the question, "Which of the following people live in the same household with you?" "Father?" "Other male?" (asked as separate items). MOTHER'S FAMILY STATUS was coded "mother only," "mother living with girl's father." As in the case of MOTHER'S EMPLOYMENT STATUS, although MOTHER'S FAMILY STATUS is a trichotomous nominal variable, order is implied. In the case of MOTHER'S FAMILY STATUS, the highest value implies highest conformity to patriarchal family structure, the lowest value implies lowest conformity to that structure, and the middle value implies a level between the highest and lowest.

Measurement of the Dependent Variable

EDUCATION PLAN was measured by the question: "As things stand now, how far in school do you think you will get?" Response categories were:

1 = less than high school
2 = high school graduate
3 = under 2 years vocational-technical
4 = 2 years vocational-technical
5 = under 2 years college
6 = 2 years or more of college up to degree
7 = Bachelor's degree
8 = Master's degree
9 = Doctoral degree

Statistical Analysis

Frequency and percentage distributions, supplemented by Chi square with Yate's correction, were used to make an initial examination of white and black females' education plans. The more easily interpretable Student's t test analysis for differences between white and black females was conducted for education plans.

Two-way analysis of variance was used to examine the effects of race and family income and the interaction of race and family income on education plan.

To analyze the causal effects of the independent variables on the dependent variable, education plan was regressed using SPSSx's forward entry method on each of five independent variable (i.e., RACE [as a dummy variable], FAMILY INCOME, MOTHER'S EDUCATION STATUS, MOTHER'S EMPLOYMENT STATUS, and MOTHER'S FAMILY STATUS) plus five additional interaction variables (i.e., Race x Family Income, Race x Mother's Education Status, Race x Mother's Employment Status, and Race x Mother's Family Status). Where valid data was available on MOTHER'S OCCUPATION STATUS, each dependent variable was again regressed on the same set of variables, substituting MOTHER'S OCCUPATION STATUS for MOTHER'S EMPLOYMENT STATUS.

The causal models were examined on the basis of (1) the variables included in the model and (2) the direction and size of coefficients (betas). Assumptions regarding interval scale, normality, linearity, multicollinearity, and criterion for entry of independent variables into the regression equation were discussed in an earlier work (Karraker, The Effects of Race).

FINDINGS

The majority (83.8 %) of all females plan to pursue some form of post-secondary education and almost half (45.6 %) plan to complete at least a Bachelor's degree.

Education Plan and Race

As shown in Table 1, differences between black and white females on EDUCATION PLAN are small for individual categories of Bachelor's degree or less. Of some interest is that a larger percentage of black females than white females plan the highest degree (7.2 versus 13.0).

Table 1

EDUCATION PLAN by RACE (Weighted Valid Percentages).

Education Plan	Race White	Black	Total
Less than High School	.2	.6	.2
High School Graduate	16.6	13.1	16.2
-------Subtotal	16.8	13.7	16.4--------
Under 2 Years Vo-Tech	9.4	7.0	9.1
2 Years Vo-Tech	9.3	14.3	9.9
-------Subtotal	18.7	21.3	19.0--------
Under 2 Years College	3.9	2.4	3.7
2 Years or More College	15.7	12.1	15.2
Bachelor's Degree	25.4	23.7	25.2
-------Subtotal	45.0	38.2	44.1--------
Master's Degree	12.3	13.8	12.5
Doctoral Degree	7.2	13.0	7.9
-------Subtotal	19.5	26.8	20.4--------
Total DEFFWT N (100%)	1440	206	1646
Missing Data N	25	5	30
%	1.7	2.4	1.8

Chi square with Yate's Correction = .16, p > .10

The results of Student's t-test (shown in Table 2) confirm that the relationship between EDUCATION PLAN and RACE is not statistically significant (p = .579).

Table 2

Student's t-Test Analysis for the Relationship Between EDUCATION PLAN and RACE.

Race	DEFFWT N	Mean	Standard Deviation	Standard Error
White	1440	5.5342	2.267	.060
Black	206	5.8256	2.331	.162

F	p
1.06	.579

Pooled Variance Estimate			*	Separate Variance Estimate		
t	d.f.	p.	*	t	d.f.	p
-1.72	1644	.086	*	-1.68	263.80	.093

Table 3 shows the difference between the frequency distributions for females' EDUCATION PLAN and MOTHER'S EDUCATION STATUS. For both blacks and whites, EDUCATION PLAN in the females' generation is higher than EDUCATION STATUS in the mothers' generation. Considerable intergenerational difference is evident between the percentages of females who plan a high school education or less and the percentages of mothers who had achieved that EDUCATIONAL STATUS (43.1 percent less among white females and 50.6 percent less among black females). This undoubtedly reflects in part the exclusion from the study of females who did not remain in high school into the spring of their senior year.

Table 3

Difference Between Frequency Distributions of Female's EDUCATION PLAN and MOTHER'S EDUCATION STATUS by RACE (Weighted Valid Percentages).

	Race		
	White	Black	Total
Education Differences *			
Less than High School	-16.0	-30.4	-17.6
High School Graduate	-27.1	-20.2	-26.4
-------Subtotal	-43.1	-50.6	-44.0-------
Under 2 Years Vo-Tech	3.9	1.4	3.6
2 Years Vo-Tech	4.3	7.8	4.7
-------Subtotal	8.2	9.2	8.3-------
Under 2 Years College	-3.3	-4.7	-3.5
2 Years or More College	7.9	6.7	7.7
Bachelor's Degree	15.4	18.0	15.7
-------Subtotal	20.0	20.0	19.9-------
Master's Degree	8.1	9.4	8.3
Doctoral Degree	6.6	12.0	7.3
-------Subtotal	14.7	21.3	15.6-------

* Differences = (Subject's Plan) - (Mother's Status)

Education Plan and Race Controlling for Family Income

Earlier analysis indicated that black and white females did not differ significantly regarding their education plans and that the majority of both black and white females plan to attend at least some college. As shown in Table 4, the higher the family income, the higher the percentage of females, both black and white, who plan to pursue their education at least into college. When family income is controlled, some differences are apparent. Black females are less likely than white females to plan to terminate their education with high school graduation in all family income categories (for example, in the low family income category, the comparable percentages for black and white females are 16.4 percent

and 29.9 percent). White females are more likely than black females to plan to complete a Bachelor's degree in the high family income category (34.7 percent for white females versus 26.1 percent for black females). Finally, black females are more likely to plan post-graduate education in the lower family income category (21.1 percent for black females versus 14.9 percent for white females) and in the middle family income category (32.5 percent for black females versus 15.4 percent for white females, as well as a doctoral degree in the high family income category (22.2 percent for black females versus 10.4 percent for white females). Thus, black females cannot be said to have lower educational aspirations than white females when family income is controlled.

Table 4

EDUCATION PLAN by RACE and FAMILY INCOME (Valid Weighted Percentages).

Low Family Income

EDUCATION PLAN	RACE White	Black	Total
Less than High School	.1	.9	.3
High School Graduate	29.9	16.4	25.8
-------Subtotal	30.0	17.3	26.1--------
Under 2 Years Vo-Tech	7.5	8.6	7.8
2 Years Vo-Tech	8.4	15.3	10.5
-------Subtotal	15.9	23.9	18.3--------
Under 2 Years College	3.4	3.1	3.3
2 Years or More College	17.1	11.9	15.5
Bachelor's Degree	18.7	22.7	19.9
-------Subtotal	39.2	37.7	38.7
Master's Degree	8.6	12.9	9.9
Doctoral Degree	6.3	8.2	6.9
-------Subtotal	14.9	21.1	16.8-------
Total DEFFWT N (100%)	183	81	264

(Table 4 cont.)

Missing Data N	4	2	6
%	2.1	2.4	2.2

Chi square with Yate's Correction = .09, p. > .10

Middle Family Income

EDUCATION PLAN	RACE White	Black	Total
Less than High School	.3	.3	.3
High School Graduate	18.5	9.0	17.6
--------Subtotal	18.8	9.3	17.9-------
Under 2 Years Vo-Tech	11.3	6.5	10.8
2 Years Vo-Tech	11.4	12.3	11.5
--------Subtotal	22.7	18.8	22.3-------
Under 2 Years College	4.3	1.5	4.0
2 Years or More College	16.9	13.1	16.5
Bachelor's Degree	22.1	24.8	22.4
-------Subtotal	43.3	39.4	42.9-------
Master's Degree	9.2	16.0	9.9
Doctoral Degree	6.2	16.5	7.2
-------Subtotal	15.4	32.5	17.1-------
Total DEFFWT N (100%)	697	76	773
Missing Data N	10	1	11
%	1.4	1.2	1.4

Chi square with Yate's Correction = .18, p > .10

(Table 4 cont.)

High Family Income

EDUCATION PLAN	Race White	Black	Total
Less that High School	0	0	0
High School Graduate	7.0	12.3	7.2
-------Subtotal	7.0	12.3	7.2-------
Under 2 Years Vo-Tech	4.7	6.0	4.8
2 Years Vo-Tech	6.7	10.1	6.8
-------Subtotal	11.4	16.1	11.6------
Under 2 Years College	2.5	2.3	2.5
2 Years or More College	13.4	10.3	13.2
Bachelor's Degree	34.7	26.1	34.3
-------Subtotal	50.6	38.7	50.0-------
Master's Degree	20.7	9.8	20.2
Doctoral Degree	10.4	22.2	10.9
-------Subtotal	31.1	32.0	31.1-------
Total DEFFWT N (100%)	383	19	402
Missing Data N	6	1	7
%	1.5	4.0	1.7

Chi square with Yate's Correction = .98, p > .10

Two-way analysis of variance confirms that both Race ($p < .001$) and Family Income ($p. < .001$), as well as the race-family income interaction, have significant effects on Education Plan. (See Table 5) The highest level of education plans are found among females from high income families. The effect of Race on females Education plans is best understood in light of the finding, indicated in Table 5, that, compared to white females, black females are more likely to plan graduate education in the low and middle family income categories and to plan a doctoral degree in the high family income category.

Table 6

2-Way Analysis of Variance for the Relationship betwen EDUCATION PLAN and RACE, FAMILY, INCOME, and RACE/FAMILY INCOME Interaction (Valid DEFFWT N = 1438).

Source of Variation	Sum of Squares	d.f.	Mean Square	F	P
Main Effects	499.445	3	166.482	34.365	< .001
Race	59.405	1	59.405	12.262	< .001
Family Income	486.250	1	243.125	50.185	< .001
Interaction	26.129	2	13.065	2.697	.068
Explained	525.574	5	105.115	21.697	< .001
Residual	6943.108	1433	4.845		
Total	7468.683	1438	5.194		

Causal Analysis

As summarized in Table 7, four independent variables, (in decreasing order) MOTHER'S EDUCATION STATUS, FAMILY INCOME, RACE, and MOTHER'S FAMILY STATUS account for 16 percent of the variance in EDUCATION PLAN, while MOTHER'S EMPLOYMENT STATUS and all of the interaction variables fail to meet the minimum criteria for entry into the equation. When the more conservative DEFFWT (valid N = 1299) was applied, the adjusted R square decreased less than .01, the variables in the equation did not change, and the beta weights did not change.

Table 7

Multiple Regression Analysis for the Relationship Between EDUCATION PLAN and RACE, FAMILY INCOME, MOTHER'S EDUCATION STATUS, MOTHER'S EMPLOYMENT STATUS, and MOTHER'S FAMILY STATUS for all Females (valid ADJWT N = 3542).

Adjusted R Square .16

Standard Error 2.07

F 165.97 p. < .0001

Variables in the Equation

Dependent Variable

EDUCATION PLAN
(high = Doctoral Degree)

Independent Variables	B	Standard Error of B	Beta	T	p
MOTHER'S EDUCATION STATUS (high = Doctoral degree)	.31	.02	.30	18.42	<.0001
FAMILY INCOME (high = $38,000 or more)	.25	.02	.19	10.89	<.0001
RACE (high = Black)	.71	.12	.10	5.98	<.0000
MOTHER'S FAMILY STATUS (high = living with girl's father)	-.23	.05	-.07	-4.32	<.0001

Variables not in the Equation

	Beta In	Partial	Minimum Tolerance	T	p
MOTHER'S EMPLOYMENT STATUS (high = Professional/technical)	.00	.00	.77	.04	.9706
Race X Family Income	-.06	-.03	.20	-1.83	.0673
Race X Mother's Education Status	-.01	-.01	.34	- .32	.7520
Race X Mother's Employment Status	-.01	-.01	.25	- .31	.7532
Race X Mother's Family Status	.02	.01	.33	.89	.3757

These findings regarding the effects of race and socioeconomic status on female's education plans confirm findings from previous research. When other factors are controlled, black females have plans for higher levels of education than white females. Also, females from high income families and those with higher educated mothers have plans for higher levels of education than other females. Given the under-representation of black and lower socioeconomic status students in the HS&B sample (a limitation which will be discussed in more detail in the following section), these findings are especially noteworthy.

Although the size of the beta is relatively small (-.07), the finding that females who live in a household with both mother and father are less likely to plan higher education than other females contradicts the findings of most earlier research. Perhaps father-absence frees females from the inhibitions of traditional gender role stereotyped observed in the family, thus releasing them for higher aspirations regarding instrumental roles, including plans for higher education. Perhaps females growing up in father-absent families are simply more likely than other females to perceive an advantage in or a necessity for self-reliance which they determine could be enhanced by greater education attainment. Another explanation may lie in the possibility that MOTHER'S FAMILY STATUS as operationalized in this research does not affect females' EDUCATION PLAN in a linear way. Future research should evaluate the effect of MOTHER'S FAMILY STATUS further.

This first regression analysis was conducted for all subjects (regardless of whether their mothers were homemakers or were reported to have an occupation other-than-homemaker). A second regression analysis was then conducted for EDUCATION PLAN (and for each of the other three dependent variables: OCCUPATION PLAN, MARRIAGE PLAN, AND PARENTING PLAN) for only those subjects whose mothers were reported to have an occupation other-than-homemaker.

As shown in Table 8, the findings for the females who reported an occupation other-than-homemaker for their mothers are almost identical to those for all females (reported above). Also, when the more conservative DEFFWT (valid N = 956) was applied, the adjusted R square increased less than .01, but MOTHER'S FAMILY STATUS and MOTHER'S OCCUPATION STATUS both failed to meet the PIN criterion to enter the equation ($p = .0501$ and $p = .0655$), but only by a very small margin. The beta weights increased only very slightly for those variables which remained in the equation.

Table 8

Multiple Regression Analysis for the Relationship Between EDUCATION PLAN and FAMILY INCOME, MOTHER'S EDUCATION STATUS, MOTHER'S OCCUPATION STATUS, and MOTHER'S FAMILY STATUS for Girls with Mothers Other-than-Homemakers (valid ADJWT N = 2608).

Adjusted R Square	.15	
Standard Error	2.02	
F =	.09	$p < .0001$

(Table 8 cont.)

Variables in the Equation

Dependent Variable

EDUCATION PLAN
(high = Doctoral degree)

Independent Variables	B	Standard Error of B	Beta	T	p
MOTHER'S EDUCATION STATUS (high = Doctoral degree)	.25	.02	.26	12.61	<.0001
FAMILY INCOME (high = $38,000 or more)	.25	.03	.19	9.47	<.0001
RACE (high = Black)	.64	.13	.09	4.78	<.0001
MOTHER'S FAMILY STATUS (high = living with girl's father)	-.17	.06	-.06	-3.02	.0026
MOTHER'S OCCUPATION STATUS (high = Professional/technical)	.12	.04	.06	2.80	.0051

Variables not in the Equation

	Beta In	Partial	Minimum Tolerance	T	p
Race X Family Income	-.05	-.03	.19	-1.34	.1787
Race X Mother's Education Status	-.01	-.01	.32	- .28	.7761
Race X Mother's Occupation Status	-.01	-.00	.15	- .22	.8231
Race X Mother's Family Status	.00	.00	.35	.07	.9408

In sum, these data confirm the importance of both race and socioeconomic status in determining girls' education plans. A girl is more likely to plan higher education if she is black, if she has higher family income, and if she has a mother with higher education. Also, although the relationships are relatively weak, a girl is also more likely to plan higher education if she is not living with her father and if (in the case of girls whose mothers work outside the home) her mother has a higher prestige occupation.

DISCUSSION

In contrast to the "culture of poverty" thesis, the findings reported in this paper confirm those from earlier research (Kelly and Wingrove; Bush, Simmons, Hutchinson, and Blyth; Allen; Tittle). When other factors are controlled, black female adolescents' plans for higher levels of education are not generally depressed in comparison to white female adolescents. In fact, although the percentages of black and white females who plan to complete a Bachelor's degree are roughly the same, a slightly higher percentage of black females than white females plan to complete a post-graduate degree.

Limitations of the Study

Inferences from this research are limited to American black and white females who live with either their mother or with another female guardian and who remain in high school until at least spring of their senior year. In the general population, almost 95 percent of children under the age of eighteen live with their mother or another female guardian, but black children are more than three times as likely as whites to be living with mother only (United States Department of Commerce, Bureau of the Census, Statistical Abstract of the United States). In this regard, the HS&B sample, on which this study is based, is comparable to the general population.

The median number of years of education completed by black and white females in the United States have converged to within months of one another. In 1980, the year in which the HS&B data were

collected, the median years of education completed by black and white females were 12.0 and 12.6 respectively (United States Department of Commerce, Bureau of the Census, Statistical Abstract of the United States). Still, the most notable limitation of this research is, of course, the exclusion of females who have not remained in school to the senior year. The drop-out rate among black females at that time was one and a half times that of white females. In 1980 the percentage of black females who had left high school before graduation was 25.6, compared to 15.6 for white females (United States Department of Commerce, Bureau of the Census, cited in Bianchi and Spain). In a study of high school dropouts from the HS&B sample, Peng found that one out of every eight high school sophomore females in the 1980 sample left school before completing high school. His analysis indicated that, although black females were statistically significantly more likely than white females to drop out of high school, that difference (2.6 percent) was not great. Peng did find that females of lower socioeconomic status were much more likely to drop out than girls of middle or upper socioeconomic status.

The most frequent reasons sophomore girls in the HS&B sample gave for leaving school before graduation were school, work, and family related. Accordingly, the present study less accurately portrays black females and, even more significantly, those from lower socioeconomic classes, as well as those with the least interest in, aptitude for, or satisfaction with formal education,

those most immediately attracted to employment or marriage (especially the former), and those who were pregnant.

The HS&B sample is, therefore, more homogeneous on educational attainment than the general population. Had girls who had dropped out of high school been included, the percentages of black females and, even more notably, those from lower class families who were planning higher education would likely have been lower. Failure to complete high school does depress later plans for education, but the strength of findings reported in this paper would probably have been greater due to family income than to race. The magnitude of the relationship between race and education plans might have appeared stronger had 18-year old drop-outs been included. Likewise, the finding regarding the greater importance of mother's education vis-a-vis race and family income might have been modified.

The relatively small amount of missing data for each of the dependent variables and the absence of a relationship between race and missing data for the dependent variable EDUCATION PLANS is reassuring. However, earlier research found black females were significantly more likely than white females to have missing data regarding mother's education, employment, and occupation statuses and the amount of missing data with regard to mother's occupation status was high for both races (Karraker, The Effects of Race). Assuming that higher status of the mother is viewed by their daughters as more desirable, missing data may reflect in part the social desirability effect. If so, then the percentages of

subjects with lower status mothers is likely to be underrepresented.

As in the case of the exclusion of high school drop-outs, the fact of race-dependent missing data indicates that the HS&B sample is more homogeneous than the general population. Race may, in fact, interact with mother's education, employment, occupation, and family statuses more than indicated in the analysis in this paper.

Unfortunately, the original study used very rough categorizations of occupations (particularly the professional/ technical occupations). Research on the effects of mother's occupation status on adolescent female's adult-role plans really requires a data set with much more precise indicators or coding of occupation. In particular, the distinction between "pink-colar" jobs (i.e., service jobs traditionally held by women) and other jobs is of interest.

In spite of these limitations, the use of such a large, national sample drawn and weighted with the statistical precision that characterizes the HS&B data set exempts this research from many of the limitations of earlier studies. The quality of these data also permit greater accuracy in comparisons between blacks and whites and more confident inference to the general population. Further, the availabilty of the accessible, affordable HS&B data set offers continued opportunity for comparisons.

Implications for Research and Theory

The findings obtained from this research support the generalization that both race and socioeconomic status continue to influence adolescent females' adult-role plans, at least in the area of their plans for education. However, of the variables considered in this analysis, race was not found to be the most important predictor of female's education plan. Instead, mother's education status and family income were more important predictors of females' plans. In addition, mother's family status had an interesting - if weaker - effect on female's education plan.

The research reported in this paper reinforces the continued importance of race as an influence on gender role identity. However, this research also documents the considerable importance of mother's education status on female gender role identity. Unfortunately, these data do not permit examination of whether mother's educaitonal status should be viewed as a proxy for the influence of socioeconomic status or as a proxy for the influence of a female role model (or both).

Empirical work is needed to articulate at a theoretical level the nature of the linkages between mother's education and mother's occupation statuses contribute to female gender role development. This research has not determined whether daughters of mothers with high education and occupation statuses are modeling after a highly educated role model or one with high occupational status or if these daughters are responding more to family environments which make loftier plans seem more feasible.

The effect of living in a single-parent family (the subject of another paper by this author to be delievered April 9, 1991 at a conference in Milwaukee [Karraker, Growing Up in a Single-Parent]) may not be as universally negative as some previous research would suggest. Additional research is needed to determine the extent to which results reported in this research reflect non-linear effects of mother's family status on girl's plans and the extent to which mother's family status may interact with other variables such as family income, mother's education, and mother's employment status.

This research has been stimulated by the puzzle of why higher percentages of black females plan higher levels of education than white females, when the economic, political, and social barriers to attaining higher education are so much greater for black Americans than for white Americans. Although other research (e.g., Agnew and Jones) has focused on the meaning of "plans" to adolescents, the data used in this study do not measure several aspects of this complex concept. At another level, to what extent are these females - most of whom plan occupations requiring at least a college degree (Karraker, The Effects of Race) - making plans which are mutually compatible with their education agenda? What happens to those females whose level of educational plan is not in sync with their occupational plan?

In conclusion, this research supports the contention that race remains embedded in late twentieth century American culture as a primary qualifier of gender role identity. The prescence of race as an important predictor (and the methodological qualifications

discussed above) indicate that dismissing race from the constellation of variable which predict gender role development is definitely not justified, but that any analysis of the impact of race on education plans should include serious consideration of socioeconomic (and female role model) variables.

Implications for Higher Education

The research tradition in educational ambitions, aspirations, and plans has too often begun from the perspective that social status fosters cultural patterns which in turn inhibit achievement motivation (i.e., the "culture of poverty" thesis advanced by Lewis, Moynihan, Murray, and others, a perspective finding new favor in social policy circles). Confounding that tradition are critiques (e.g., Ellwood) and studies which find (e.g., Winkler) that even the poorest and most educationally deprived populations possess cultural vitality and functional behavioral norms.

The author of this paper is sensitive to criticism that "most research in higher education is stale, irrelevant, and of little use to policy makers" (Layzell B1) and that

> scholars who want to make their research more useful and thus more influential in higher-education policy making and thus more influential in education policy making should (among other suggestions) ... emphasize the big picture ... [and] de-emphasize research methodology (Layzell B3)

However, the research findings reported in this paper contribute essential empirical support for

> the need for a higher education system where race [and] income are not determinants of either the quality of quantity of higher education" (National Association for Equal Opportunity in Higher Education).

The stereotype that - more than white females' - black females' aspirations lie more in the area of childbearing than education and the re-popularized "culture of poverty" thesis (that poorer adolescents - and particularly adolescents of color - lack achievement motivation) remain persistent themes in American culture and, regrettably, in higher education social policy. To the contrary of those beliefs, this research found that black female adolescents (at least those who remained in high school through the senior year) and even the poorest black female adolescents had plans for education which, in almost every category, equalled or exceeded the plans of their white, more affluent peers. As a foundation for developing "strategies for increasing and enhancing the opportunities for blacks in higher education," (National Association for Equal Opportunity in Higher Education), empirical research must continue to play an important role in the assessment of the higher education needs of blacks.

This paper is grounded in the assumption that social structural forces (external, macrosociological factors) have a great influence on the chance of each individual to "achieve excellence." Given that, the needs of black females with regard to higher education prescribe the following policies:

(1) Strengthen social mechanisms to ensure that black females and those from the least affluent families complete high school

(2) Strengthen academic and other supports to maximize the possibility that education plans dreamed in high school will become reality following high school

(3) Insure social programs to reduce the possibility that women who do make the initial transition from high school to higher education are not forced to drop those plans because of the unavailability of financial or other supports.

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